

Pterosaurs and Tape Measures

How big were these ancient flying reptiles, *really*?

Summary:

Discover the actual sizes of several famous pterosaurs by measuring to get a real-life comparison of how big they truly were!

Guiding Questions:

What do you notice about this creature?

What can you find that is as long as each pterosaur's wingspan?

How do you think being the size it was helped each pterosaur?

Experience Goals:

- Investigate what pterosaurs were, and when they lived
- Discover the sizes of 5 different pterosaurs
- Use a measuring tool to compare pterosaur wingspans to modern day objects

Supplies:

- Pterosaur Files (pages 3-8)
- Measuring Device (a tape measure works best)
- Chalk or Tape to mark distances (optional)
- A place to do measurements over 35 feet

Steps:

1. Explore Pterosaurs

- a. Learn about the sizes and features of 5 different pterosaurs in the Pterosaur Files (pages 3-8)
- b. Discuss the fact that pterosaurs are not dinosaurs, even though they lived together. *Does that surprise you? Why or why not?*
- c. Imagine that you could see a pterosaur right in front of you, with its wings fully stretched out. This length is called a wingspan. *Can you think of anything as long as each pterosaur wingspan? Something in the house? Something outside? A room?*

2. Do Some Measuring!

- a. Investigate each pterosaur, one at a time.
- b. Find the length of the pterosaur's wingspan in the Pterosaur Files. Measure that distance with your measuring device. Mark the distance with chalk or tape.
- c. Stand near the middle of your measurement and spread your arms as far as you can. *Is your wingspan bigger than the pterosaur's?*
- d. Find an object or room you think is close to the length of what you measured for the pterosaur (just take a look and make a good guess—it's okay if it's not exact). Measure the object or room. Was it close to the pterosaur's wingspan?
- e. Try measuring the other pterosaurs on the fact sheet.

Extensions:

- Measure a pterosaur's wingspan and mark it off with chalk or tape on your sidewalk. Then use chalk to draw the pterosaur on the sidewalk for others to enjoy! Be sure to make its wings as wide as your measured marks, and don't forget to label your drawing. Then your neighbors can learn about pterosaurs too!

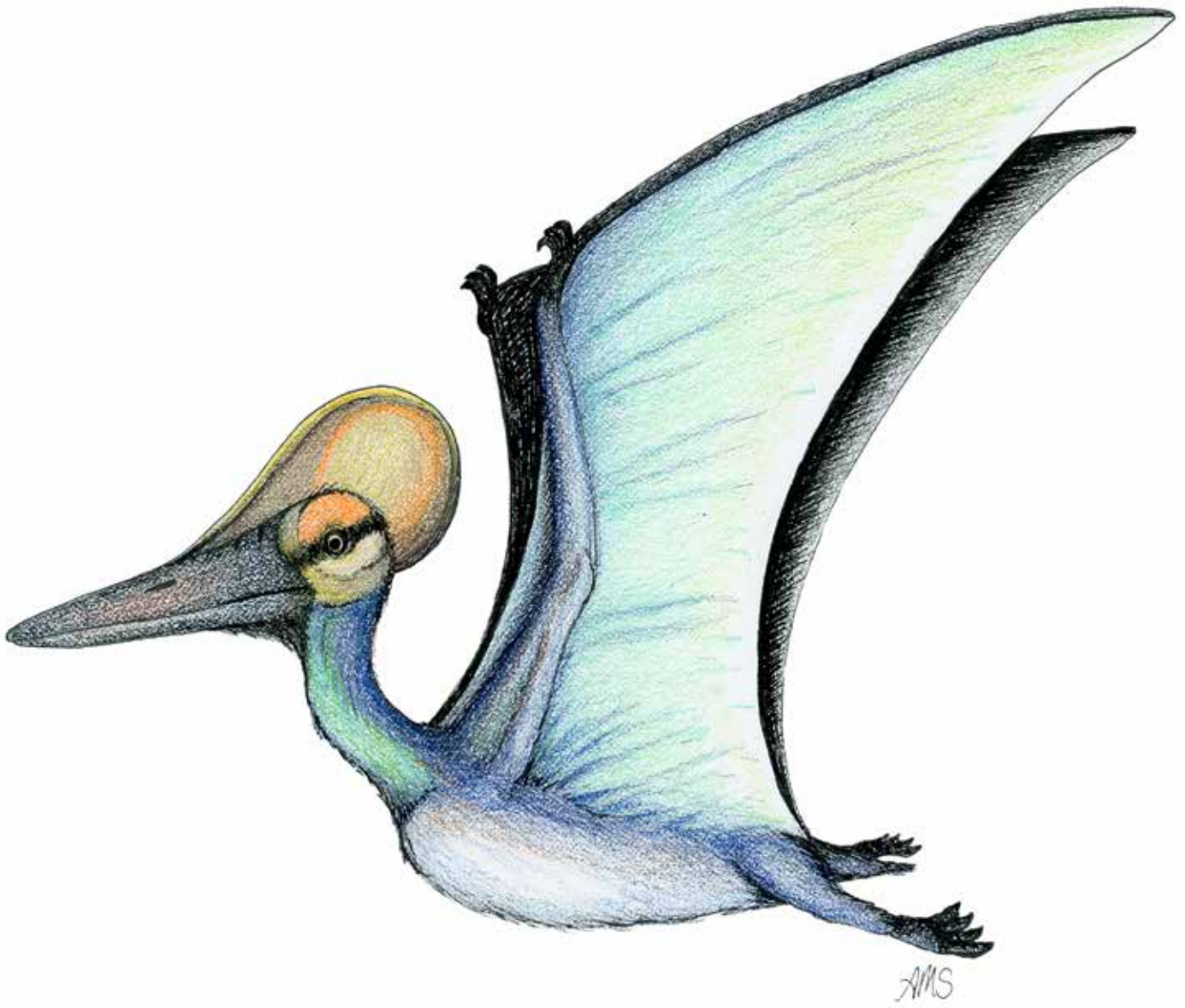
- Look up the lengths of other extinct creatures, like dinosaurs! Then measure to see how long they were- you might need to use the measuring tool more than once! Are any as long as your whole house? Longer? Here are two creature lengths to get you started:
 - *Patagotitan* (Maximo at the Field Museum): 122 feet long
 - *T. Rex* (SUE at the Field Museum): 40 feet long
- Check out pterosaur models at the Field Museum to really understand their size!!
- Adrienne Stroup, who created the wonderful pterosaur art you will see below, hosted an Instagram Live drawing tutorial on how to draw a Tully monster. It is available on the Field's Instagram page. Check it out!

https://www.instagram.com/tv/CAvfyPwFXQ2/?utm_source=ig_web_copy_link

Pterosaur Files

General Information for Pterosaur Investigators:

- Pterosaurs are not dinosaurs, nor are they birds! They belong to a different family in the tree of life. They are closely related to dinosaurs, so one way to think of them is “dinosaur cousins”. They did live alongside dinosaurs.
- The name pterosaur means “Winged Lizard”.
- There are around 150 species of pterosaurs found in the fossil record (so far!).
- “Pterodactyl” is not another word for pterosaur. *Pterodactylus*, or a “pterodactyl”, is just one (or possibly two) of the 150 or so species of pterosaur. Calling all flying reptiles pterodactyls is like calling all cats “cheetahs”.
- Based on the fossil record, pterosaurs lived from 228 million years ago to 66 million years ago. They died out along with the dinosaurs when an asteroid struck the Earth. Some scientists think the asteroid impact made the Earth too hot for pterosaurs to fly.
- Different types of pterosaurs likely had varied diets, including fish, insects, carrion, other pterosaurs, and even dinosaurs!
- Pterosaurs were widespread, with their fossils discovered on every continent.



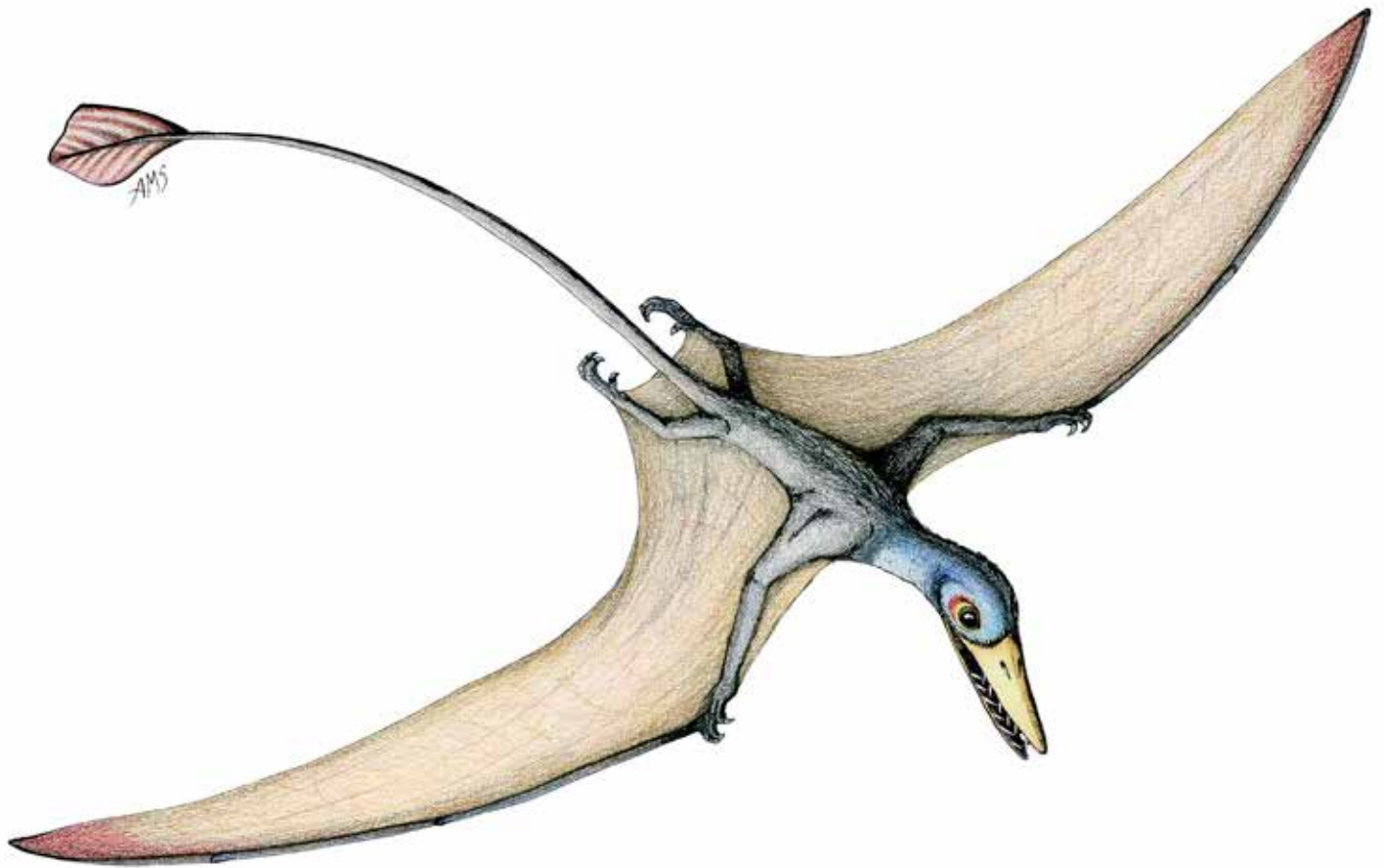
Pterosaur Name: *Pterodactylus* (Pterodactyl) “tare-o-DAK-til-us”

Name Meaning: Winged Finger

Wingspan: 5 feet (1.5 meters)

Fun Fact: *Pterodactylus* was the first pterosaur ever discovered in 1789. At first some scientists believed it was a swimming creature!

Artwork by Adrienne Stroup, Field Museum



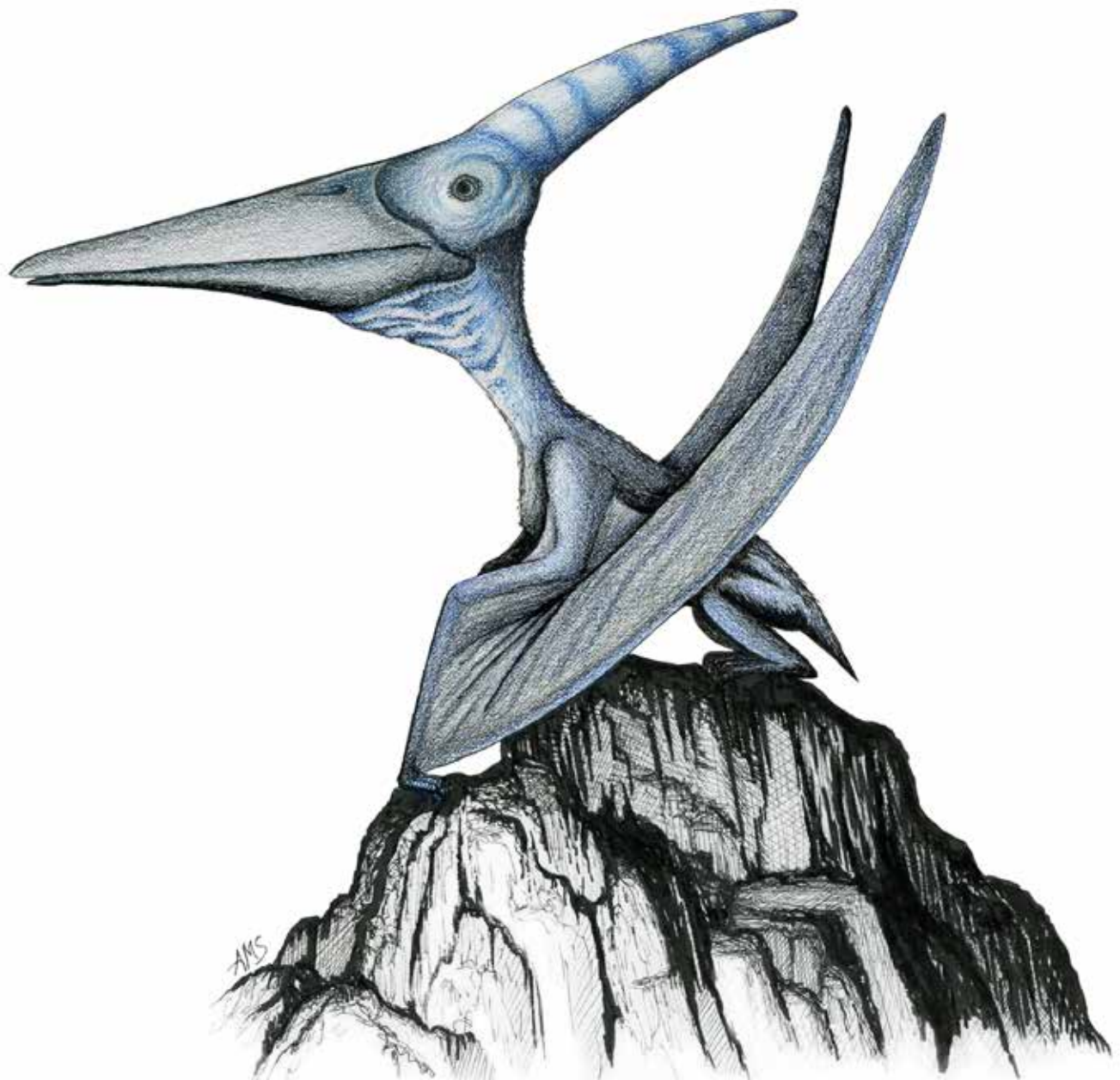
Pterosaur Name: *Rhamphorhynchus* “ram-fo-RINK-us”

Name Meaning: Beak Snout

Wingspan: 6 feet (1.8 meters)

Fun Fact: *Rhamphorhynchus* had jaws filled with needle-like teeth, and a diamond-shaped tip on its tail. This part of the tail likely served as a rudder, to help the creature steer while flying.

Artwork by Adrienne Stroup, Field Museum



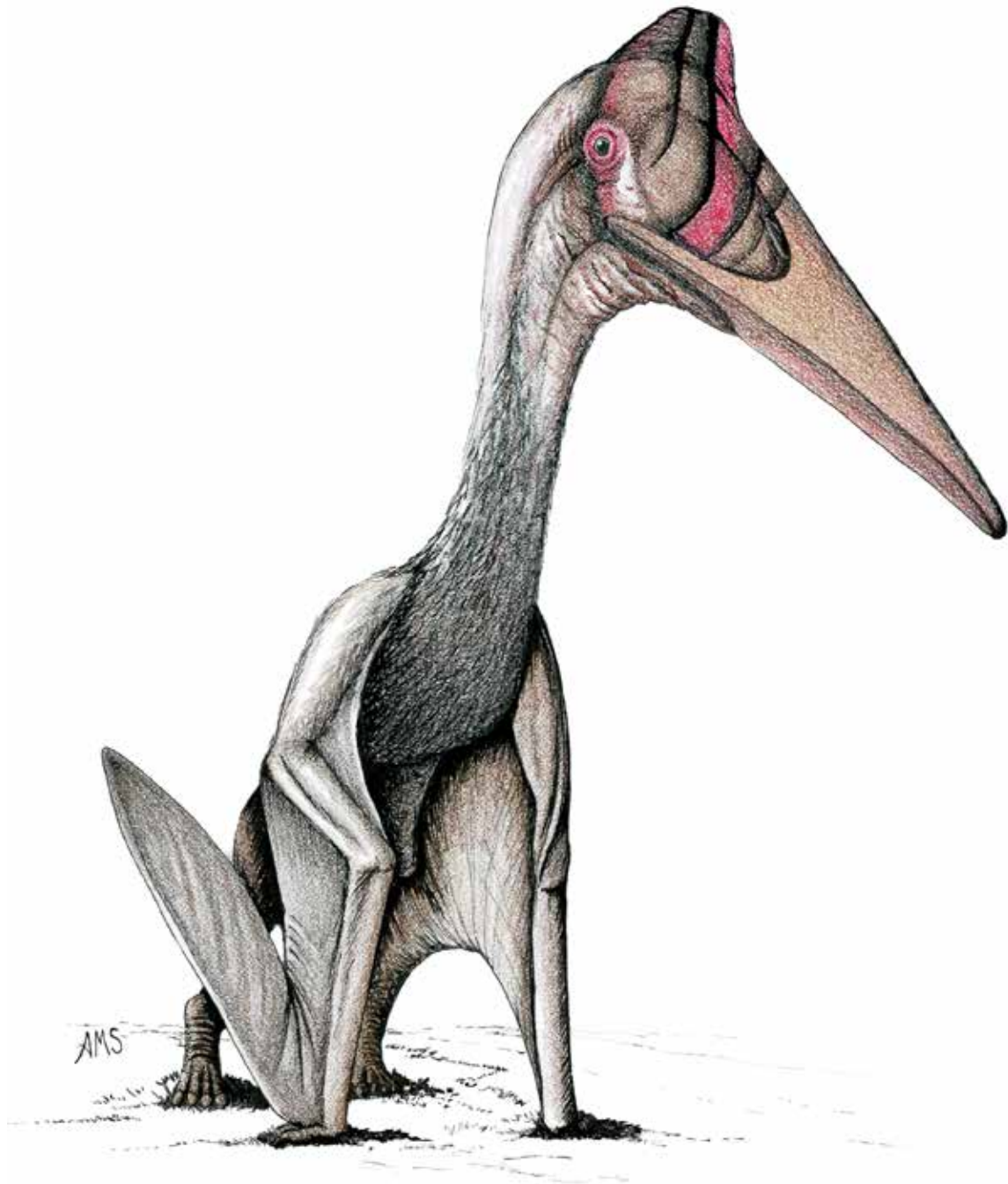
Pterosaur Name: *Pteranodon* “tair-AN-o-don”

Name Meaning: Winged and Toothless

Wingspan: 20 feet (6.3 meters)—Male

Fun Fact: Many paleontologists believe that male and female *pteranodons* were different in their body size (females were smaller) and head crests (males had bigger crests).

Artwork by Adrienne Stroup, Field Museum



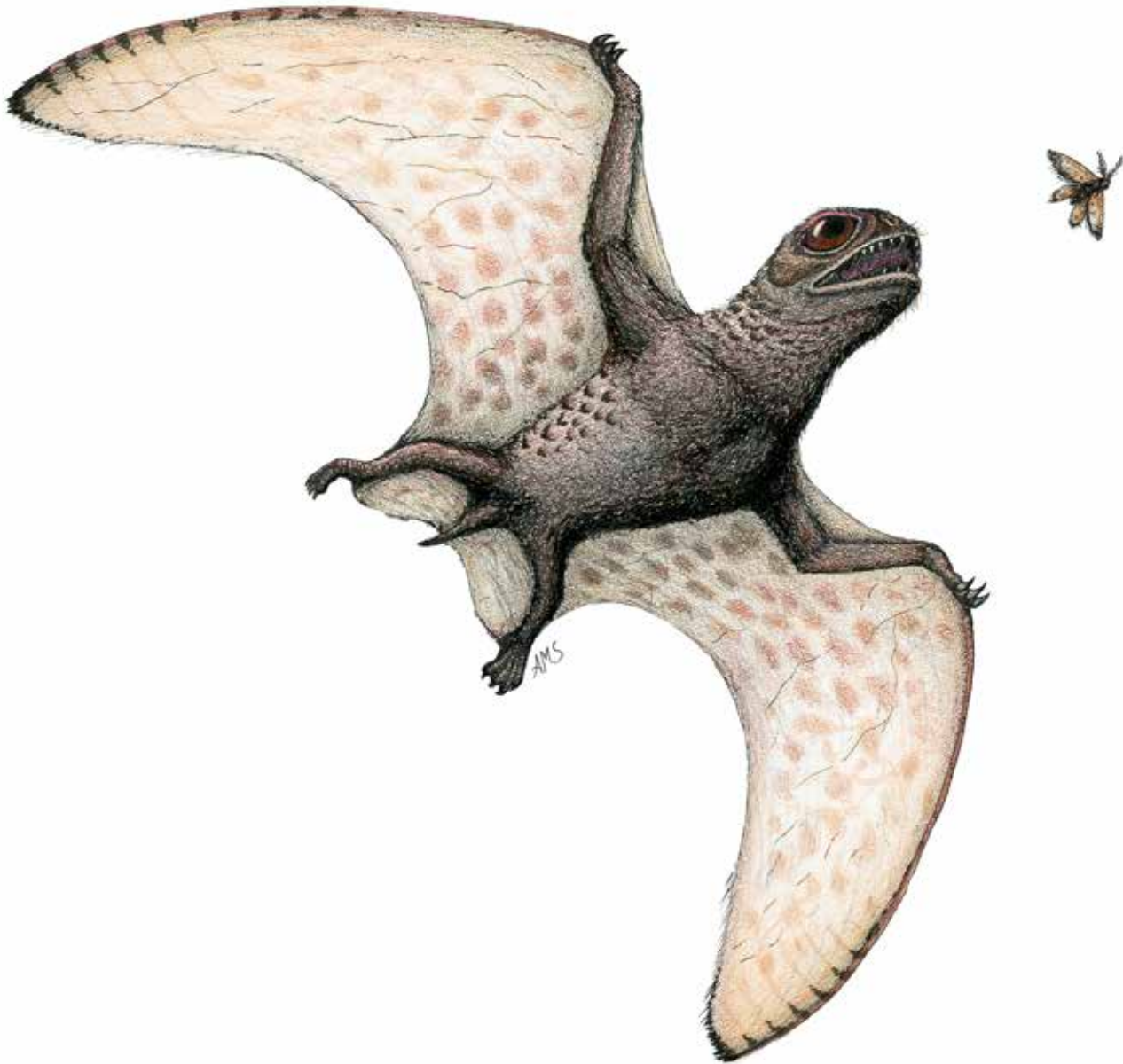
Pterosaur Name: *Quetzalcoatlus* “ketz-uhl-ko-AT-lus”

Name Meaning: Feathered Serpent God

Wingspan: 35 feet (10.7 meters)

Fun Fact: One of the largest living creatures to ever fly, *Quetzalcoatlus* was named after an Aztec god after it was discovered in Texas in 1971 (named in 1975).

Artwork by Adrienne Stroup, Field Museum



Pterosaur Name: *Anurognathus* “an-YOOR-og-NATH-us”

Name Meaning: Tailless Jaw

Wingspan: 20 inches (50 centimeters)

Fun Fact: This tiny pterosaur likely hunted insects using its big eyes and silent wings covered in pycnofibers (fur-like feathery fibers on the body).

Artwork by Adrienne Stroup, Field Museum